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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,480	03/01/2004	James S. Shirk	102-008-US	7566
28727	7590	05/03/2006	EXAMINER	
STAMATIOS MYLONAKIS 7009 CASHELL MANOR COURT DERWOOD, MD 20855-1201			FERGUSON, LAWRENCE D	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,480	<b>Applicant(s)</b> SHIRK ET AL.	
	<b>Examiner</b> Lawrence D. Ferguson	<b>Art Unit</b> 1774	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-18, drawn to a multilayer structure, classified in class 428, subclass 411.1.
  - II. Claim 19, drawn to method of manufacturing 19, classified in class 427, subclass 585.
2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can be made by forming a multilayer structure by combining melt stream (A) with melt stream (B) to form parallel layers (A) and (B) and calendaring the combined material.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Stamatios Mylonakis on April 21, 2006, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-18. Affirmation of this election must be made by applicant in replying to this

Art Unit: 1774

Office action. Claim 19, withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently name inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### **Claim Objections**

6. Applicant is advised that should claim 1 be found allowable, claim 2 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

In claim 13, the phrase "bleds thereof" is objected to. Examiner suggests amending this phrase to read "blends thereof."

### ***Claim Rejections – 35 USC § 102(b)***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1774

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 6-7 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yializiset al. (U.S. 5,912,069).

Yializiset discloses a plurality of sheets comprising thousands of alternating layers A and B (column 4, lines 5-10) where the first layer has a thickness of at least 20nm and the second layer has a thickness of at least 0.9 (column 4, lines 11-16). Because Yializiset teaches a plurality of at least two alternating layers A and B which meet the formula of  $(AB)_x$ , it is inherent for the refractive index of component (a) or component (b) being capable of being varied by tensile, compressive or shear force. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Mere recitation of newly-discovered function or property, inherently possessed by things in prior art, does not cause claim drawn to those things to distinguish over prior art. The Patent Office can require applicant to prove that subject matter shown to be in prior art does not possess characteristic relied on where it has reason to believe that functional limitation asserted to be critical for establishing novelty in claimed subject matter may be inherent characteristic of prior art; this burden of proof is applicable to product and process claims reasonably considered as possessing allegedly inherent characteristics. In claims 1 and 2, the phrase, "wherein the refractive index of said component (a) or component (b) can be varied by tensile, compressive or shear force" constitutes a 'capable of' limitation and that such a recitation that an element is 'capable of'

Art Unit: 1774

performing a function is not a positive limitation but only requires the ability to so perform.

***Claim Rejections – 35 USC § 102(b)***

9. Claims 1-4, 6-7 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Wheatley et al. (U.S. 5,278,694).

Wheatley discloses a multilayer structure comprising a plurality of at least two polymeric layers ranging from a hundred to several thousand alternating layers, which differ from each other in refractive index, where the layers have an individual thickness of not more than 0.09 micrometers and not less than 0.45 micrometers (column 8, lines 36-45). Wheatley further discloses the polymeric layers comprise polycarbonate, polymethyl methacrylate and natural rubber (column 11, lines 15-30 and 50-64) where the sheet has a thickness of 3.2 mm (column 17, lines 25-26).

Because Wheatley teaches a plurality of at least two alternating layers A and B which meet the formula of  $(AB)_x$ , it is inherent for the refractive index of component (a) or component (b) being capable of being varied by tensile, compressive or shear force. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Mere recitation of newly-discovered function or property, inherently possessed by things in prior art, does not cause claim drawn to those things to distinguish over prior art. The Patent Office can require applicant to prove that subject matter shown to be in prior art does not possess

Art Unit: 1774

characteristic relied on where it has reason to believe that functional limitation asserted to be critical for establishing novelty in claimed subject matter may be inherent characteristic of prior art; this burden of proof is applicable to product and process claims reasonably considered as possessing allegedly inherent characteristics.

In claims 1 and 2, the phrase, "wherein the refractive index of said component (a) or component (b) can be varied by tensile, compressive or shear force" constitutes a 'capable of' limitation and that such a recitation that an element is 'capable of' performing a function is not a positive limitation but only requires the ability to so perform.

***Claim Rejections – 35 USC 102(e)***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-6 and 8-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kollaja et al (U.S. 6,579,601).

Kollaja discloses multilayer films having alternating layers of at least 29 layers up to 500 layers and of different polymeric materials, where the film has a thickness no

Art Unit: 1774

greater than 250 micrometers (column 2, lines 3-24 and column 7, lines 60-65). The reference teaches multilayer films constructed up to several thousand layers of alternating polymeric layers with different refractive indices (column 1, lines 36-45). Kollaja further discloses a tie layer between the polymeric alternating layers (column 2, lines 40-41) where the polymeric layers comprises copolymers of methyl methacrylate, polycarbonates (column 4, lines 52-59) along with maleic anhydride grafted polyethylene, nylon and elastomeric material, such as propylene rubber (column 5, lines 44-60 and column 15, line 26). Kollaja discloses other functional layers can be added to the film (column 9, lines 5-20).

Because Kollaja teaches a plurality of at least two alternating layers A and B which meet the formula of  $(AB)_x$ , it is inherent for the refractive index of component (a) or component (b) being capable of being varied by tensile, compressive or shear force. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Mere recitation of newly-discovered function or property, inherently possessed by things in prior art, does not cause claim drawn to those things to distinguish over prior art. The Patent Office can require applicant to prove that subject matter shown to be in prior art does not possess characteristic relied on where it has reason to believe that functional limitation asserted to be critical for establishing novelty in claimed subject matter may be inherent characteristic of prior art; this burden of proof is applicable to product and process claims reasonably considered as possessing allegedly inherent characteristics.



Art Unit: 1774

In claims 1 and 2, the phrase, “wherein the refractive index of said component (a) or component (b) can be varied by tensile, compressive or shear force” constitutes a ‘capable of’ limitation and that such a recitation that an element is ‘capable of’ performing a function is not a positive limitation but only requires the ability to so perform.

***Claim Rejections – 35 USC § 103(a)***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kollaja et al (U.S. 6,579,601).

Kollaja is relied upon for claim 1. Although Kollaja does not explicitly disclose the thickness of each layer, thickness is an optimizable feature. It would have been obvious to one of ordinary skill in the art to optimize the layers of Kollaja because discovering the optimum or workable range involves only routine skill in the art. The thickness directly affects durability and flexibility of the multilayer film. *In re Aller* 105 USPQ 233 and see *In re Boesch*, 617 USPQ 215.

***Claim Rejections – 35 USC § 102(b)***

14. Claims 1-4, 6, 8, 10-11 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hyde et al. (U.S. 6,045,895).

Hyde et al (U.S. 6,045,895) teaches an adhesive construction having up to several thousand layers of alternating polymers with different refractive indices (column 1, lines 26-30) with a thickness no greater than 250 micrometers (column 1, lines 55-62) having at least 29 layers (column 2, lines 10-15). Hyde further discloses the multilayer film has an  $(AB)_n$  construction (column 5, lines 25-30) comprising rubbery elastomer material, methacrylate, vinyl acetate and fluorinated polymer (column 8, lines 39-48, column 9, lines 1-10, 50-55 and column 9, line 65 through column 10, line 5).

Because Hyde teaches a plurality of at least two alternating layers A and B which meet the formula of  $(AB)_x$ , it is inherent for the refractive index of component (a) or component (b) being capable of being varied by tensile, compressive or shear force. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Mere recitation of newly-discovered function or property, inherently possessed by things in prior art, does not cause claim drawn to those things to distinguish over prior art. The Patent Office can require applicant to prove that subject matter shown to be in prior art does not possess characteristic relied on where it has reason to believe that functional limitation asserted to be critical for establishing novelty in claimed subject matter may be inherent

Art Unit: 1774

characteristic of prior art; this burden of proof is applicable to product and process claims reasonably considered as possessing allegedly inherent characteristics.

In claims 1 and 2, the phrase, "wherein the refractive index of said component (a) or component (b) can be varied by tensile, compressive or shear force" constitutes a 'capable of' limitation and that such a recitation that an element is 'capable of' performing a function is not a positive limitation but only requires the ability to so perform.

***Claim Rejections – 35 USC § 102(b)***

15. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's own admission.

Applicant admits it is known to produce a material comprising many thousands of alternating layers of polymers, polymer composites and/or polymers containing inorganic or metallic particles which are chosen to have substantial differences in the index of refraction (Specification, paragraph 0004).

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shaw et al (U.S. 6,264,747) teaches multiple layers of acrylate forming a plurality of alternating layers of different material having varied refractive index (column 12, lines 55-65).

Art Unit: 1774


**Conclusion**

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
L. Ferguson  
Patent Examiner  
AU 1774

  
RENA DYE  
SUPERVISORY PATENT EXAMINER  
A.U. 1774 4/20/06